CHAPTER 1 GENERAL

This design concept report (DCR) presents the preliminary concept for roadway construction in the State Route (SR) 303L corridor between Interstate 10 (I-10) and US 60, from milepost 4 to milepost 20. The Loop 303 corridor is located between Cotton Lane and Sarival Avenue on the far west side of the Phoenix Metropolitan Area. See Figure 1-1 and Figure 1-2. This DCR contains recommendations developed through extensive consultations with the public and private participating agencies. An Environmental Assessment (EA) was also prepared concurrent with this DCR.

SR 303L exists as an interim two-lane rural highway with very limited access to adjacent properties and with at-grade intersections at each one-mile street crossing. The purpose of this project is to prepare a DCR and EA for SR 303L for the limits described above. The roadway has been classified by the Maricopa County Department of Transportation (MCDOT) as a "Rural Major Freeway" and is to be developed to the standards of the Arizona Department of Transportation (ADOT). The *Regional Transportation Plan* prepared by the Maricopa Association of Governments (MAG) and adopted by the MAG Regional Council on November 25, 2003, includes funding for a six-lane freeway from the planned I-10 Reliever/MC 85 to Interstate 17 (I-17). The roadway will have full access control and will have grade separations or interchanges at intersecting streets. The project was advanced by MCDOT under an Intergovernmental Agreement with ADOT dated July 31, 2000. Responsibility for the project returned to ADOT in July 2006. The proposed roadway will be designed in accordance with the ADOT Roadway Design Guidelines for a full access-controlled highway with six or more lanes in an urban/fringe area.

The objective of the DCR portion of the project is to develop the concept for the ultimate roadway and to identify the steps needed to implement the project. The preparation of the DCR was managed by MCDOT from 2001 to 2007. ADOT was responsible for completing the DCR and accompanying EA.

The goals of the DCR process are as follows:

- Develop a consensus for action among the affected agencies and the general public.
- Preserve right-of-way for the ultimate roadway.
- Promote compatible development on the surrounding properties.
- Prepare a design concept for the ultimate roadway to be used as a guide in the final design of the initial roadway construction projects.
- Obtain environmental clearance for the ultimate roadway and related regional drainage system.
- Establish a process so that the roadway can be developed in a logical, cost-effective manner that meets the needs of the public.

1.1 PROJECT DESCRIPTION

The proposed project on SR 303L consists of a fully access-controlled grade separated urban freeway. The typical section is designed to accommodate five lanes of traffic in each direction plus auxiliary lanes between closely spaced interchanges. The inside lane in each direction may be designated for use by high-occupancy vehicles (HOV). The planned roadway will have a rolling profile where, in general, it will be elevated over existing cross streets and return to near ground level between cross streets. This configuration is planned from south of Indian School Road to north of Waddell Road. Starting north of Thomas Road and going southward, the freeway will be partially depressed at Thomas Road and fully depressed at McDowell Road and at I-10. The roadway would then be elevated over the Roosevelt Irrigation District (RID) canal and Van Buren Street. Going northward from Waddell Road, the freeway would be partially depressed at Greenway Road, fully depressed at Bell Road, and partially depressed to just south of US 60. The freeway will then rise to go over US 60 utilizing the existing structure for southbound traffic.

Service interchanges are planned at the following locations: Van Buren Street and Thomas Road split diamond connected by north-south frontage roads; Indian School Road, Camelback Road, Bethany Home Road, and Glendale Avenue standard diamond interchanges; Northern Avenue and Olive Avenue split diamond connected by north-south frontage roads; Peoria Avenue, Cactus Road, Waddell (Thunderbird) Road, Greenway Road, and Bell Road standard diamond interchanges. Based on recently approved plans for major developments, the City of Surprise has requested consideration of single point urban interchanges (SPUI) at several locations.

A major five-level stack system interchange is planned at I-10. Realignment and reconstruction of I-10 will be needed to construct this interchange. I-10 is planned to ultimately have five lanes plus an HOV lane in each direction plus auxiliary lanes between closely spaced interchanges. The planned system interchange ramps will extend along I-10 from near Bullard Avenue on the east to Perryville Road on the west. Near SR 303, the alignment of I-10 is planned to be shifted northward in order to maintain the existing south right-of-way line adjacent to recent residential development.

The existing Cotton Lane service interchange on I-10 is planned to be removed and replaced by a split diamond at Sarival and Citrus roads connected by one-way frontage roads. These east-west frontage roads are planned to intersect the north-south frontage roads that connect Van Buren Street to Thomas Road.

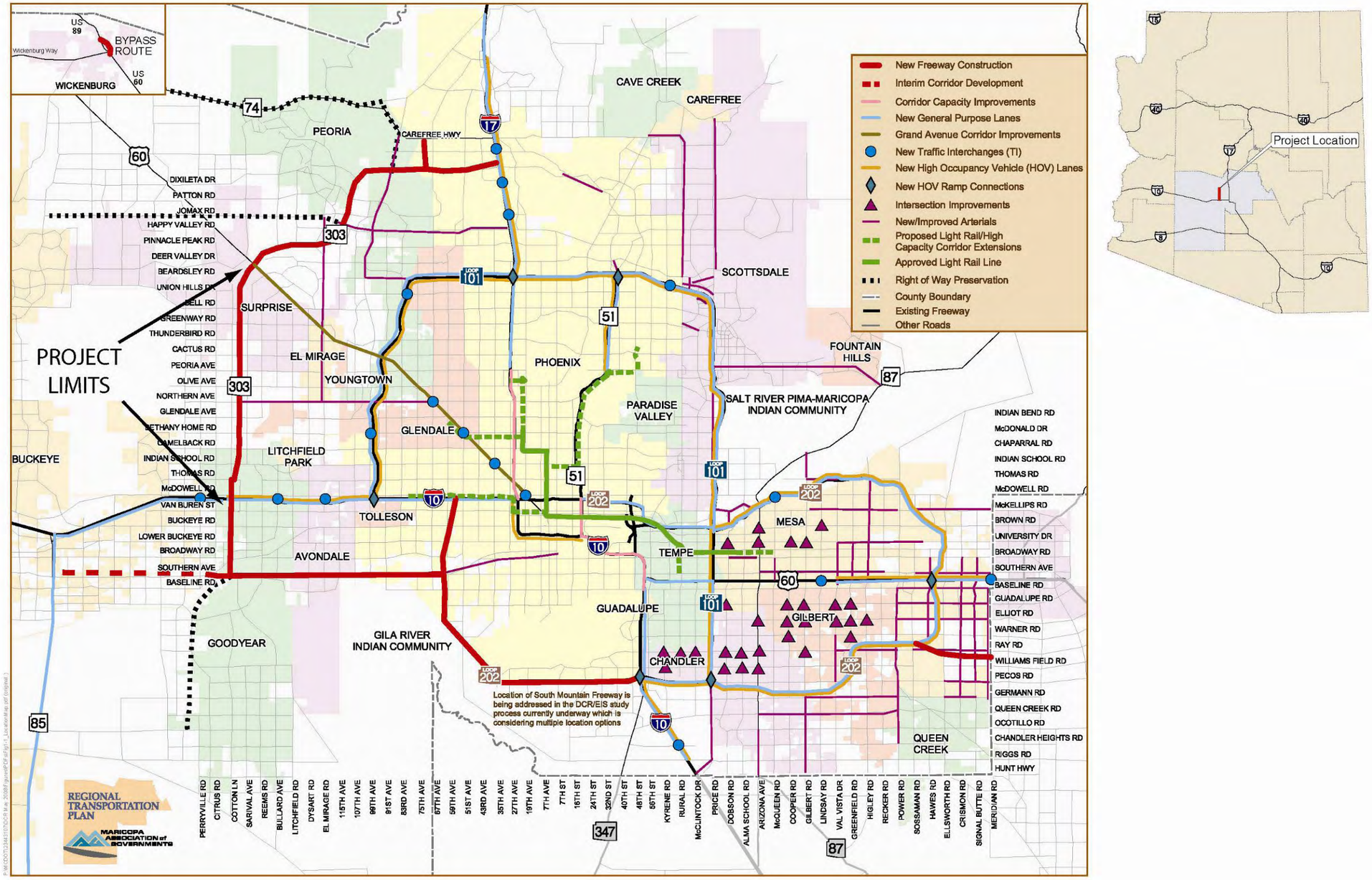
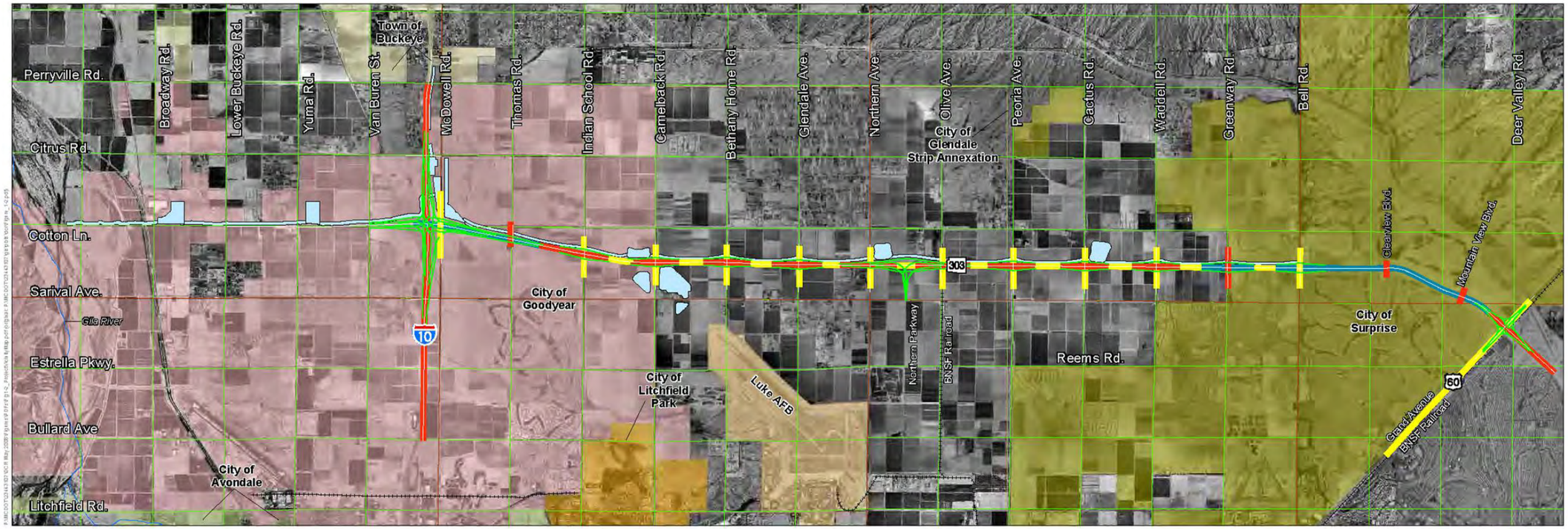
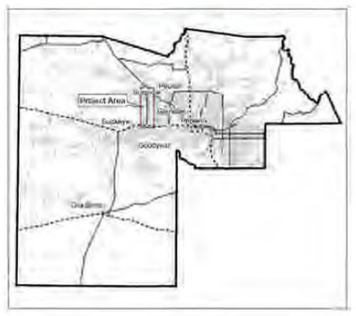


Figure 1-1 Location Map





Legend

- Elevated Roadway
- Roadway At Grade
- Depressed Roadway
- Ramp/Frontage Road
- Regional Drainage System
- Township and Range Line

0 2,500 5,000 10,000 Feet

0 0.5 1 2 Miles

Map Produced 07/11/06

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Figure 1-2 Project Vicinity Map

Within the five-level stack, SR 303 and Ramps SW and WN are planned to be below ground level; the frontage roads and McDowell Road would be at ground level; I-10 and Ramps ES and WE would be at level one; Ramps SE and NW would be at level 2; and Ramps EN and WS would be at level 3. Room has been provided in the interchange for a future direct HOV ramp connection between the north leg of SR 303 and the east leg of I-10. The future HOV ramp would be at level 2.

The RID Canal passes under I-10 east of Cotton Lane and crosses the SR 303 alignment south of I-10. The RID Canal is planned to be placed in a free-flow box structure for the SR 303 crossing. I-10 is planned to bridge over the RID Canal in a manner similar to the existing crossing.

A system interchange is planned on SR 303 at the proposed Northern Parkway half-way between Northern and Olive avenues. This interchange is planned to be a directional T style with no movements to the west of SR 303. This system interchange and its extension to Sarival Avenue are included in the SR 303 cost estimate.

A system interchange is planned at US 60 that will incorporate the existing SR 303 bridge structure over US 60 and the BNSF. The proposed interchange is called a "Stacked Single Point Urban Interchange (SPUI)" and will have three levels. SR 303 will be on level 1 above ground, US 60 and BNSF will remain at ground level, and the ramps between the two roadways will be below ground level. A two-phase signal is planned at the intersection of the ramps below US 60.

The off-site drainage system concept was developed by the Flood Control District of Maricopa County (FCDMC) as part of the White Tanks/303 Area Drainage Master Plan. The proposed system consists of a series of stormwater channels along the west side of SR 303, with detention basins located at various points along the route, with outfalls to other drainage facilities and a final outfall to the Gila River approximately 4 miles south of Van Buren Street (to be provided by FCDMC through a separate project).

The concept drawings for the proposed project are shown in Chapter 15.

1.2 PURPOSE AND NEED

Improvements to the transportation system in the SR 303L Study Area are needed to:

- Accommodate existing and projected local, regional, and interstate travel demand, including truck traffic
- Provide acceptable traffic performance
- Conform to local and regional development and transportation plans

The purpose of the proposed project is to improve the existing SR 303L transportation facility from I-10 to US 60 and meet the above-described needs through:

- Provision of an improved connection to the US 60/US 93 corridor between Phoenix and Las Vegas, Nevada
- Completion of an important link in the MAG Regional Freeway System (RFS) that accommodates regional growth and provides improved traffic conditions for local and regional traffic
- Integration of the existing facility into a consolidated local drainage system
- Provision of a transportation facility that responds to local and regional development and transportation plans

1.2.1 Need for the Proposed Project

1. Connection of West Phoenix Metropolitan Area to Northwest Arizona and Nevada

To achieve and maintain acceptable traffic conditions on US 60 in coming years, ADOT has limited choices. In terms of physical changes, ADOT has few options for upgrading US 60 from southeast of the SR 303L intersection to the State Route 101 Loop (SR 101L) interchange. Addressing increasing traffic congestion along this stretch of US 60 is largely confined to facing the issue from the demand side: diverting long distance, through-traffic to another route. One purpose of the proposed SR 303L project is to create a primary diversion route for US 60 through-traffic.

US 60, at the northern end of the SR 303L Study Area, serves as a continuation of US 93, which links Phoenix to Interstate 40 (I-40) east of Kingman and to Interstate 15 (I-15) in Las Vegas. However, west of I-17, no continuous major transportation facility links I-10 and US 60 to serve the public's transportation needs to enter and leave the northwestern Phoenix metropolitan area. Currently, the Arizona portion of US 93 is being upgraded to a four-lane divided highway, and a bypass of Wickenburg is also planned. This upgrading of US 93 reflects the increasing importance of this route as a carrier of intercity and interstate traffic.

With the proposed improvements, SR 303L would efficiently connect I-10 in the west Phoenix metropolitan area with the US 60/US 93 corridor. At present, the efficiency of the existing SR 303L is deteriorating. Currently, the traveling public has four primary ways to enter the Phoenix metropolitan area from US 93, northwest of the Study Area:

1. US 60 to SR 101L
2. SR 74 to I-17
3. US 60 to the existing SR 303L
4. US 60 to I-17 at Thomas Road

As will be shown in the following discussion, US 60 is overburdened southeast of the SR 303L intersection. It was not designed to handle heavy volumes of interstate and regional traffic. The proposed SR 303L improvements are the most promising and viable way to relieve traffic congestion on US 60.

The US 60 corridor southeast of the existing SR 303L connection is becoming increasingly urban. This portion of US 60 does not have operational characteristics consistent with being considered part of the RFS (i.e., freeways identified in the RTP) because 19 traffic signals have been installed in the 11-mile distance between SR 303L and SR 101L (one signal every 0.6 mile). Because of the diagonal orientation of US 60, good signal progression and smooth-flowing traffic have proved difficult to achieve. With planned improvements, this portion of US 60 would be an "enhanced arterial/limited expressway," with six lanes in each direction and most, if not all, of the traffic signals remaining.

SR 74 runs east–west between US 60 and I-17 on the northern edge of the Phoenix metropolitan area. It does provide a free-flow, two-lane rural highway linking US 60 to I-17. This route is and will continue to be used by some motorists headed for the northern, central, or eastern parts of the metropolitan area. However, this route is fairly distant from the Study Area and does not serve the majority of the truck traffic on US 60.

Thus, while US 60 and SR 74 offer routes connecting highways in northwestern Arizona with the Phoenix metropolitan area, neither offers as efficient and direct a connection with I-10 in the west Phoenix metropolitan area as would SR 303L with the proposed improvements.

Truck traffic is a special component of US 60 long-distance travel. A roadside interview survey with truckers was conducted by MAG on major highways serving the Phoenix area.[1] The survey found that the combined routes of US 60 and US 93 west and north of Wickenburg served 1,809 trucks per day, accounting for 23 percent of the total vehicles on those highways. For comparison, on I-10, which is a true Interstate Highway and carries more interstate freight, the share is around 35 percent. Of the trucks discussed in the MAG 2001 study, 65 percent were passing through the Phoenix area and 35 percent were headed for destinations within the metropolitan area. In the urban area, the primary destination was the I-10 corridor west of I-17, where warehousing and intermodal facilities are located. The primary destination for through-trucks was I-10 east toward Tucson and New Mexico.

Traffic classification counts completed in 2001 by MCDOT on US 60 near SR 303L and on SR 303L indicated that approximately 30 percent of the truck traffic entering the urban area on US 60 used SR 303L. At that time, truck traffic on SR 303L amounted to approximately 24 percent of all vehicles using that route. Therefore, the existing SR 303L is serving as a truck diversion route for US 60 because it provides a relatively free-flow route to I-10. In 2004, MCDOT updated data on truck travel patterns in an origin-destination study specifically for SR 303L (see Table 2-1). This study indicated that trucks made up 15 percent of the existing traffic on SR 303L. These data further indicated that 38 percent of the trucks were passing through the metropolitan area, 25 percent were going to destinations within the metropolitan area, and 37 percent were local trips (those originating from and destined to a location along SR 303L). Truck traffic into the area is expected to continue to increase as the Phoenix metropolitan area and the state continue to develop, but through-truck trips are expected to become a smaller and smaller portion of the traffic stream as the Study Area becomes urbanized.

With no changes to the existing SR 303L roadway, traffic signals would eventually be needed at most, if not all, of the cross streets. With more traffic signals, fewer trucks would divert from US 60 to SR 303L and those nondiverted trucks would remain on US 60 and have to encounter 19 traffic signals before reaching SR 101L. Additional noise from trucks using this portion of US 60 could not be effectively mitigated because of the frequency of intersecting streets. Furthermore, this increased truck component would contribute to US 60 becoming more and more undesirable in terms of traffic performance and would also increase air quality impacts.

SR 74 provides a free-flow, two-lane rural highway linking US 60 to I-17. This route is and will continue to be used by some truck drivers headed for the northern, central, or eastern parts of the metropolitan area. SR 74, however, is not designed to accommodate heavy volumes of truck traffic.

US 60 to I-17 at Thomas Road offers truck drivers arriving from the northwest the ability to reach destinations near the Phoenix urban core. However, it involves considerable traffic congestion and numerous traffic signals. Driving time is substantially greater compared with using a freeway route. For some origins and designations, however, this is still an appropriate truck route.

While a major transportation facility is needed to accommodate regional growth in and near the Study Area (see next section), meeting the demand of regional and interstate truck traffic for efficient access to I-10 in the west Phoenix metropolitan area and reducing truck traffic volumes on US 60 southeast of the SR 303L intersection are also important needs.

[1] *Loop 303 Truck Origin-Destination Study*, January 2004, Maricopa County Department of Transportation, Maricopa County, Arizona

2. Accommodation of Regional Growth and Linkage to Regional Freeways

With regional growth in population, employment, and housing comes regional mobility needs. Vehicle miles traveled are projected to outpace socioeconomic trends, as they typically have in Phoenix since the 1950s.

From the early 1950s to the mid-1990s, Maricopa County's population grew by more than 500 percent (while the U.S. population as a whole was increasing by approximately 70 percent). Rates of population, employment, and housing growth experienced since the 1950s are projected to continue through 2030. Maricopa County remains one of the most rapidly growing counties in the United States. Between 2000 and 2006, its population increased 23 percent, to nearly 3.8 million (Arizona Department of Economic Security [ADES] 2007). That population is expected to nearly double by 2030, to 6.3 million.

The SR 303L Study Area is about 18 miles long and 1 mile wide, at the edge of the rapidly expanding cities of Goodyear and Surprise (at the southern and northern ends of the corridor, respectively). In addition to the Pebble Creek development (in the south) and the Sun City Grand development (in the north), numerous additional developments are planned or underway throughout the Study Area. For example, a large residential and commercial development is proposed at the planned junction of SR 303L and the proposed Northern Parkway.

Remarkable growth in both population and employment is projected within the SR 303L corridor over the next three decades. Population is expected to grow more than 169 percent, from just over 146,000 in 2005 to nearly 394,000 by 2030. The central portion of the Study Area and general vicinity currently lack the transportation facilities and infrastructure necessary to adequately accommodate this projected growth.

Accompanying the projected population growth is the rapid expansion in the number of dwelling units in the corridor, from over 68,000 in 2005 to around 173,000 in 2030. Underlying this estimate is an average persons-per-dwelling unit expansion from 2.14 in 2005 to 2.28 in 2030, reflecting the transition of retirement-oriented development patterns to more family-oriented ones in the future. Families with children create more transportation demand than do retired people. Taking children to school, doctor's appointments, shopping, recreational and social activities, lessons, etc., generates more trips per household. Retired people tend to avoid travel during peak demand times. They also tend to own fewer vehicles per household.

In the same vein, estimated employment in 2005 of over 34,000 in the general Study Area vicinity is projected to increase 395 percent to over 170,000 by 2030. This increase is based on a decade-based average growth rate of 111 percent.

Over time, a commensurate increase in development density/intensity is projected to occur as the corridor character changes from rural to suburban-urban as future residents and, to a lesser extent, employment opportunities locate within the Study Area. Population density in 2005 in the Study Area (858 persons per square mile) is projected to grow by 169 percent by 2030 (to 2,309 persons per square mile). This mirrors the projected changes in employment density in the general Study Area vicinity by 2030 (from 202 employees per square mile in 2005 to 999 employees per square mile in 2030).

A higher growth rate occurs from 2005 to 2020 than from 2020 to 2030 (refer to Table 2-3). This slowing in projected growth is primarily attributable to diminishing land development opportunities as the Study Area approaches build-out.

SR 303L is a part of a planned system of freeways. With its extension from US 60 to I-17, it would serve as a critical connection between I-10 and I-17. It would be a northwestern "outer belt" portion of the RFS farther west than SR 101L. Since inclusion in the State Highway System in 1985, substantial right-of-way (R/W) has been obtained and the existing, interim roadway was constructed.

Proposed improvements to SR 303L would create the only regional corridor to directly serve an area that will someday be home to over 300,000 people. Without this link, residents in the northern portion of the corridor would have to travel 10 to 12 miles to the south on arterial streets to reach I-10 or travel 8 to 10 miles east on arterial streets to reach SR 101L. Arterial streets are not designed to serve such long trips while also handling shorter trips and providing access to commercial and other land uses that develop along these types of streets.

The economic vitality and quality of life of a community the size of the Phoenix metropolitan area depend on a system of major transportation facilities reasonably spaced throughout the area. Such facilities support local travel while also accommodating regional and commercial movement. The SR 303L corridor is 9 miles west of SR 101L, so it is at the outer edge of the range of typical urban freeway spacing. Fourteen miles farther to the west is the Sun Valley Parkway. These two major roadways (SR 101L and Sun Valley Parkway) are spaced too far away to effectively serve the SR 303L Study Area.

3. Traffic Conditions/Performance

Level of Service

In addition to capacity in terms of vehicles per day (vpd), another way to consider the adequacy of a given road is to examine its ability to deliver a given level of service (LOS). LOS is a qualitative rating of the operating conditions of a road or freeway. Under this six-level, "report card" approach, an "A" represents the least congested traffic conditions and an "F" represents the most congested conditions (see Figure 1-3).

Figure 1-3 Level of Service

Level of Service A

Level of Service B

Level of Service C

Level of Service D

Level of Service E

Level of Service F

LOS characterizes traffic conditions using factors such as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience of motorists. When a road reaches its maximum vehicle capacity, traffic lacks the ability to dissipate even the most minor disruption, and any incident can be expected to produce a serious disruption in traffic flow with extensive traffic back-ups. Additionally, motorists' maneuverability within an at-capacity traffic stream is extremely limited, adversely affecting their physical and psychological comfort. Because of these factors, most transportation planners strive to design freeways to achieve LOS D or better.

Most of SR 303L operates now at LOS E (considerable traffic congestion, with motorists unable to pass slower-moving vehicles, and inefficient travel) during peak hours. In 2003, the majority of SR 303L was operating at LOS C. Since 2003, traffic volumes have increased from around 8,000 vpd to nearly 20,000 vpd (averaged from MAG 2007 traffic counts at 15 different locations from McDowell to Beardsley roads). Correspondingly, LOS has been degraded to LOS D or E during the peak hours.

Forecast traffic volumes on US 60 for 2030, southeast of the SR 303L connection, will result in traffic performance on US 60 with an unacceptable LOS. Based on 2004 traffic counts, the existing SR 303L was diverting approximately 3,000 vpd from US 60. Based on the 2030 forecast, an SR 303L improved to freeway status would divert 14,000 vpd from US 60. Through this additional increment of vehicles diverted, US 60 would—with some widening and construction of key grade separations at intersections such as Bell Road—be able to continue to provide an acceptable LOS. Without this diversion of traffic to SR 303L, transportation planners would face substantial traffic congestion and delays on US 60, but have few alternative strategies for addressing the deterioration in LOS.

Traffic Signals

Between I-10 and US 60, SR 303L has 16 urban cross streets, 14 of which are at-grade. With anticipated increased traffic volumes, each of these at-grade intersections would require the installation of traffic signals (five, not counting the signal at US 60, are now signalized). If this were to occur and motorists had to contend with stopping at traffic signals at mile intervals, SR 303L would function more as an urban arterial street instead of as a rural highway (as it does now). The installation of traffic signals at cross streets would reduce travel speed on SR 303L to less than 25 miles per hour (mph) during peak hours. Travel speed is now 60 mph during peak travel hours.

Traffic Volumes

In 1992, when SR 303L first opened to traffic, the road carried 550 to 1,100 vpd. By 2003, traffic grew to 7,267 vpd, an increase of about 560 percent in 11 years. In 2004, MCDOT opened additional road segments between US 60 and Happy Valley Road, in addition to implementing other improvements. Traffic volumes

in 2004 ranged from 12,000 to just over 19,000 vpd north of US 60, reflecting the ongoing regional growth and the extension of the road. The road functions as a rural two-lane highway on which the ability to pass slower-moving vehicles is the primary criterion in determining its LOS. Design capacity (LOS C) of SR 303L south of US 60 is estimated to be 7,900 vpd, a volume exceeded regularly as early as 2003. With recently planned and newly constructed improvements, such as new urban signalized intersections with additional turn lanes, the capacity will increase to 13,500 vpd, but travel speed will decrease.

If road capacity is available, traffic forecasts indicate that the volumes on SR 303L could increase from 13,581 vpd in 2004 to 93,000 vpd in 2015 and to around 144,000 vpd in 2030. Such projections indicate ample demand will exist in the corridor to justify construction of a major transportation facility. Without adequate road capacity, motorists would choose less-congested routes—typically adjacent arterial streets—to reach their destinations, thus shifting traffic congestion from one type of road to another type of road less capable of handling additional traffic. If SR 303L were to remain as it is today, peak-hour traffic congestion would be extensive both on this road and on the parallel arterial streets, including Citrus Road, Cotton Lane, and Sarival Avenue.

If SR 303L were improved to have traffic signals at 1-mile intervals, the average off-peak travel speed with optimal traffic signal progression would be approximately 43 mph. During peak travel times, the average speed could drop to less than 25 mph. Average speeds between 25 and 43 mph would mean that SR 303L would no longer serve its intended regional function.

Such average travel speeds and the likelihood of having to stop at numerous traffic signals would negate the road's planned regional function. Less traffic would be diverted from US 60, Citrus Road, Cotton Lane, and Sarival Avenue. Motorists would seek these other routes not designed for higher-speed travel, and the resultant diversion of traffic would necessitate improvements on these other routes. Trucks and vehicles on longer trips would be subjected to delays and backed-up traffic at numerous signalized intersections and to stop-and-go travel. The result would be increases in traffic congestion, air quality impacts, and travel time along the corridor.

In 2030, the current configuration of SR 303L would need to accommodate projected traffic volumes ranging from 22,600 to 49,700 vpd—on a highway originally designed to carry approximately 7,900 vpd. Near-term planned improvements would increase this capacity to 13,500 vpd. Travel demand in the corridor would exceed planned capacity such that the two- and four-lane road with signalized intersections and left-turn lanes at each mile would function at LOS F for several hours per day. The excess travel demand would also overload adjacent parallel streets. Traffic speeds on the unimproved SR 303L would average 21 mph in 2015 and remain at that level into the future.

4. Consolidation of Drainage Infrastructure

The off-site watershed to the west of SR 303L is largely undeveloped, consisting of desert, mountains, and agricultural fields. Runoff from the White Tank Mountains and the adjacent desert is conveyed overland and within washes, ultimately draining into the Gila River, south of the Study Area.

The existing SR 303L is a two- to four-lane rural highway with at-grade intersections at most 1-mile street crossings and with limited cross-drainage culverts and storm drain systems. Small culverts cross the roadway at approximately a dozen locations. The existing ditches and culverts convey runoff from routine storms, but are inadequate for larger stormwater flows, i.e., flows resulting from storms expected to occur less frequently than every 2 years.

The FCDMC intends to address the inadequacies of the existing stormwater drainage system. If the proposed improvements were to be built, FCDMC and ADOT would coordinate in consolidating and simplifying the drainage system to better protect the public and land uses in the SR 303L corridor from major storm runoff. Interim drainage outfalls would be constructed during the initial phase of the proposed SR 303L improvements by FCDMC. FCDMC would also handle the construction of ultimate drainage improvements.

1.2.2 Conformity with Regulations, Land Use Plans, and Other Plans

The 2003 RTP calls for a new major transportation facility—a freeway that is part of the RFS—to connect I-10 and US 60. To conform to the intent of this regional transportation plan, the proposed improvements are needed.

The Study Area for the proposed improvements encompasses land under the jurisdiction of the Cities of Goodyear, Glendale, and Surprise; Maricopa County; and land under the management of the Arizona State Land Department (ASLD).

All local jurisdictions with responsibility for planning near the SR 303L corridor have recognized the need to improve SR 303L to a freeway facility, and their land use plans and general plans reflect that need. To ensure consistency, conformity, and compatibility, the following general plans were reviewed:

- City of Glendale's *Glendale 2025: The Next Step General Plan* (2002a) and *Transportation Plan* (2002b)
- City of Goodyear's *General Plan* (2003)
- City of Surprise's *General Plan 2020: Imagine the Possibilities* (amended in 2005)

- MAG's *Valley Vision 2025* (2000) and *Regional Transportation Plan* (2003)
- Maricopa County's *White Tanks/Grand Avenue Area Plan* (updated 2004); and *2020 Eye to the Future Comprehensive Plan* (updated in 2002)

Applicable land use planning documents for ASLD were also reviewed to determine project conformity. However, the ASLD planning documents do not reflect the need for an enhanced transportation facility.

1.2.3 Conclusion

SR 303L is part of the RFS, a planned system of freeways that includes a link between I-10 and I-17 on the west and north sides of the metropolitan area. The proposed project is a vital portion of this planned system. US 60 was not designed to accommodate long-distance, through-traffic—particularly truck traffic headed for I-10 in the west Phoenix metropolitan area—and a need exists to divert such traffic to another route. The RTP calls for upgrading the existing SR 303L to a freeway in part to relieve traffic congestion along US 60 southeast of the SR 303L intersection because options to address deteriorating traffic conditions on US 60 from the SR 303L intersection southeast to the SR 101L interchange are severely limited. The issue is best faced from the demand side: diverting traffic from US 60 to another route.

Improved capacity and LOS on SR 303L are needed to accommodate rapid growth in the volume of traffic as the surrounding land is developed. Additionally, much of the truck traffic from the northwestern part of the state and Las Vegas is headed to warehousing facilities on I-10, west of I-17. Truck traffic needs to be removed from US 60 and diverted to an improved SR 303L to provide a more efficient and direct route that would partially relieve traffic congestion on US 60.

A new major transportation facility would need to be integrated into a planned, consolidated area drainage facility. Such integration would minimize costs by eliminating the need for multiple culverts under the transportation facility because drainage would be collected on the west side of the Study Area and diverted south to the Gila River rather than crossing under the transportation facility—as is currently the case—and then being diverted to the south.

1.3 JURISDICTIONS AND PARTNERSHIPS

SR 303L lies wholly within Maricopa County, Arizona. It was accepted into the State Highway System in 1985 and is currently on the State Highway System. It is included in the MAG Regional Transportation Plan as a freeway, and ADOT has the responsibility for design, construction, operation, and maintenance.

An intergovernmental agreement between MCDOT and ADOT signed July 31, 2000, enabled MCDOT to be responsible for the planning, interim improvements, maintenance, and operation of the SR 303L roadway. MCDOT aggressively planned, designed, and constructed extensions of the interim roadway constructed by ADOT in 1992 between Indian School Road and Bell Road. MCDOT constructed a new four-lane divided roadway from McDowell Road to Indian School Road and extended the interim road northward from Bell Road to US 60. A bridge was built over US 60 (Grand Avenue) and a new four-lane divided roadway was opened in May 2004 from US 60 to Happy Valley Parkway (near the 115th Avenue section line).

Proposition 400, approved by the voters of Maricopa County in November 2004, provides funding for SR 303L. ADOT took over the responsibility for design, construction, maintenance, and ownership of the route in July 2006.

ADOT obtained a large portion of the right-of-way needed between Indian School Road and US 60 through dedications by property owners in exchange for construction of the interim roadway in 1992. MCDOT has acquired additional right-of-way along the corridor and for the extensions of the interim road southward to McDowell Road and northward from US 60 to Happy Valley Parkway. Some of the dedications were subject to a "reverter" clause if ADOT did not start the freeway construction by 2005. The amount of land affected is currently in dispute.

The MCDOT contract with URS to prepare this DCR and EA is partially funded by ADOT, and ADOT is a major stakeholder in the process. The ultimate roadway concept is developed in accordance with the ADOT *Roadway Design Guidelines* and in accordance with the preferences and experience gained by ADOT in the construction and operation of the Valley Freeway System.

SR 303L from I-10 to US 60 passes through three municipalities. Portions of the adjacent property has been annexed into these cities and the remainder is in the municipal planning area in which the cities have "staked their claim" for future annexation. Until annexation occurs, MCDOT is responsible for the road system in these unincorporated areas. The general municipal planning boundaries along the SR 303 corridor are as follows:

- Goodyear: South of I-10 and north to Camelback Road
- Glendale: Camelback Road to Peoria Avenue
- Surprise: Peoria Avenue to north of US 60
- Maricopa County: Sun City West is north of Grand Avenue and east of the SR 303 corridor and is not slated for incorporation by any of the municipalities

There are numerous landowners and developers along the corridor that are important stakeholders and participants in the process. Meetings were held between project staff and the land owners/developers near

the I-10 interchange during the identification and evaluation of alternative configurations. Other meetings have been held either through the local jurisdiction or directly with developers in all three cities.

1.4 PROJECT HISTORY

The roadway corridor now known as SR 303L was first envisioned in the *West Area Transportation Analyses* prepared in 1985 for MAG. The corridor was envisioned as a ring road that would link MC 85 and 1-10 to US 60 and eventually connect to I-17. It would serve as a bypass route as well as serve the area through which it passes when that area develops into urban uses. The need for the roadway was not foreseen during the 2005 planning period used in that study, but preservation of right-of-way was recommended.

The roadway has undergone numerous steps through its 20-year history. Those steps are documented chronologically in Appendix C. The description below provides a summary of the major actions that have led to the current status of the roadway during the preparation of this DCR and EA.

SR 303L was incorporated into the MAG Long Range Transportation Plan in July 1985 for right-of-way protection as the Cotton Lane/Northwest Loop freeway corridor and was included in the Proposition 300 referendum in October 1985 that resulted in a 20-year ½-cent sales tax to fund the urban freeway system in Maricopa County. ADOT included the route in the State Highway System as SR 517 and later named it the Estrella Freeway Loop 303. ADOT proceeded with location and environmental studies. The following three reports were produced and resulted in selection of a roadway location and general concept: *Draft Reconnaissance Report*, February 1987; *Estrella Freeway Final Environmental Assessment*, September 1991; and *Estrella Freeway Preliminary Location Plan and Profile*, November 1991 prepared by Cella Barr for ADOT.

The location selected (within the limits of the current project) begin at I-10 near the Cotton Lane section line. North of I-10, the alignment swings to the mid-section line between Cotton Lane and Sarival Avenue and continues in this position to the Union Hills Road section line. At that point, the alignment curves to intersect US 60 south of the Beardsley Canal. This selected alignment resulted from the corridor, alignment, and environmental documentation reports mentioned above. The alignment provides a starting point for the current study.

Based on the selected alignment, ADOT proceeded to obtain right-of-way dedications in exchange for advancing the construction of a two-lane highway in the corridor. The two-lane highway was constructed and opened to traffic in 1992. The extent of the dedicated right-of-way was documented in a report prepared for MCDOT in July 1999 entitled *Alignment Study Loop 303 McDowell Road to Clearview Boulevard*.

In 1994, due to a projected shortfall in the Proposition 300 revenue and the defeat of Proposition 400, which would have provided funding for SR 303, the Governor's Office working with ADOT recommended deleting the SR 303 from the freeway system. MAG therefore removed the corridor from the adopted Long Range Transportation Plan, and ADOT announced its intention to remove the roadway from the State Highway System. Maricopa County requested in June 1995 that the roadway not be removed from the highway system and volunteered to be "caretaker" of the corridor.

A concept plan was prepared for MCDOT by Cannon & Associates for the portion of the corridor from south of the Union Hills section line to the Reems Road section line. These plans contain a partial cloverleaf interchange between SR 303L and US 60.

MCDOT commissioned the preparation of the *Estrella Corridor Study and Design Concept Report* prepared by Deleuw Cather and completed in March 1998. This study primarily focused on the portion of SR 303L east of US 60. The report confirmed the use of the location per the earlier studies by ADOT but suggested that a six-lane, at-grade expressway using MCDOT Rural Principal Arterial standards and a design speed of 65 mph be constructed between I-10 and US 60. This recommendation was based on the assumption that ADOT would remove the corridor from the State Highway System and that MCDOT would be solely responsible for funding the roadway. No alignment was selected for SR 303L east or north of US 60.

A supplementary Drainage Memorandum was prepared in August 1998 that recommended a drainage channel be constructed along the west side of the highway to intercept stormwater flows.

The *Estrella Roadway and Grade Separation, Phase I Technical Design Memorandum* by Cannon & Associates was completed for MCDOT in August 1999. In this report, several alternatives were identified and evaluated for the portion of SR 303L from Clearview Boulevard to a point north of US 60. A concept was chosen, and the design of the interim roadway and bridge over US 60 was completed in June 2000.

In 1999, MAG included SR 303L in the Long Range Transportation Plan as a four-lane, access-controlled facility and included the portion from US 60 to I-17 as a "Study Corridor." On May 15, 1999, the Arizona State Transportation Board formally decided to not abandon Loop 303 to local jurisdictions.

MCDOT contracted with DMJM to prepare a prototype interchange concept for SR 303L. The final report was published in January 2000, and an addendum was published in July 2000. An agreement was reached with Del E. Webb Corporation to exclude interchanges in the segment between Bell Road and US 60 and for funding participation in the design and construction of overpasses for Clearview Boulevard and Mountain View Boulevard. Dedication of the right-of-way through the Sun City Grand development was confirmed.

An intergovernmental agreement between MCDOT and ADOT was signed on July 31, 2000, that enabled MCDOT to continue the planning, design, construction, and maintenance of SR 303L with certain stipulations and funding participation by ADOT. The agreement stipulates that the ultimate roadway is to be

"a fully access-controlled facility." Construction of the interim roadway from Clearview Boulevard to east of US 60, including a grade separation with US 60 and the BNSF, commenced.

On January 24, 2001, the MAG Regional Council approved the "Lone Mountain Alignment" as the preferred option for the Loop 303 connection with I-17.

In April 2001, MCDOT contracted with URS to prepare an EA for the section between I-10 and US 60 and to prepare the DCR for the portion between Indian School Road and Clearview Boulevard. The Initial DCR was completed April 24, 2002 and presents alternative interim roadway concepts and an ultimate roadway concept. In October 2001, MCDOT contracted with HDR to prepare a preliminary DCR for SR 303L from MC 85 to Indian School Road including the system interchange at I-10.

Entranco completed final design plans in February 2002 for a four-lane divided interim roadway between McDowell Road and Indian School Road. Construction was completed and the new roadway opened to traffic in 2003.

MCDOT also completed plans for a four-lane divided interim roadway between US 60 and Happy Valley Road (near the 115th Avenue section line), and a new bridge over the Agua Fria River for Happy Valley Road to connect with Lake Pleasant Road. This new roadway is scheduled to be open to traffic in May 2004.

In March 2003, MCDOT extended the contract with URS to complete the DCR for SR 303 from I-10 to US 60 and to include the full interchanges at both ends of the project. The revised and expanded DCR incorporates substantial updates in traffic forecast and philosophy for the design and phasing of SR 303. This report is the product of that effort. Concurrent with the DCR, MCDOT had URS prepare a safety study of existing SR 303 to determine immediate actions that could be undertaken to reduce the frequency and severity of crashes occurring on the interim roadway. These immediate actions are described in Section 2.6.

In November 2003 the MAG Regional Council adopted the new *Regional Transportation Plan* that includes funding for SR 303 as a six lane freeway from proposed SR 801 to I-17. The Governor signed a bill in February 2004 authorizing a public vote on Proposition 400 in Maricopa County to extend the existing ½ cent sales tax for another 20 years to supplement other state and federal funds to construct the Regional Transportation Plan. This proposition was approved by vote in November 2004.

In July 2006, responsibility for the design, construction, and operation of SR 303L was transferred back to ADOT.

In January 2007, the State Transportation Board approved accelerating the design and construction of three sections of SR 303 utilizing Statewide Transportation Acceleration Needs (STAN) funds allocated by the State Legislature in 2006. A total of $22 million of STAN funds were earmarked for a Bell Road structure over SR 303 and SR 303 intersection improvements at Cactus and Waddell Roads through the SR 303L right-of-way. In 2007, ADOT took over full responsibility for completion of the DCR and EA.

1.5 EXISTING SITE CONDITIONS

The existing roadway that is designated SR 303L begins at I-10 and the Cotton Lane interchange and extends northward approximately 15 miles to US 60. From Van Buren Street to McDowell Road, the existing road has four lanes with no median or physical separation between northbound and southbound traffic. At the interchange with I-10, a southbound left-turn lane is provided. The ramp terminals are stop-signed controlled.

Just north of McDowell Road, interim SR 303L curves eastward onto a new alignment recently constructed by MCDOT (Work Order No. 68965). The new four-lane divided roadway was completed in 2003 and eliminates two 90-degree turns that existed in the alignment at Thomas Road.

From Indian School Road to Clearview Boulevard (approximately Union Hills section line), existing SR 303L is a two-lane rural highway with minimal shoulders. This roadway was constructed by ADOT in 1992 (Contract No. M600-9-501, Cactus Road to Clearview Boulevard; Contract No. M600-9-502, Indian School Road to Glendale Avenue; and Contract No. M600-9-502, Glendale Avenue to Cactus Road).

MCDOT has recently widened intersections and installed traffic signals at Indian School Road (Work Order No. 69028), Northern Avenue and Olive Avenue (Work Order No. 69030) and Greenway Road (Work Order No. 3041084).

In 2002, MCDOT completed a two-lane interim roadway from north of Bell Road to Grand Avenue (Project No. 69005 plans dated June 8, 2000). This new interim roadway was constructed along the future southbound lanes of the planned freeway based upon earlier plans. The roadway is partially to fully depressed. The project also included a two-way "jug-handle" type access road constructed in the southeast quadrant of the future interchange with a signalized intersection at US 60. The project also included a new bridge for SR 303L to pass over Grand Avenue and the BNSF. The bridge was dedicated as Patriots Bridge and was designed to carry four lanes of traffic. Initially, the bridge will carry two-way traffic. A second, parallel bridge is proposed as part of the planned freeway presented in this DCR.

The Del Webb Corporation constructed bridge structures for Clearview Boulevard and Mountainview Boulevard to cross over SR 303 to provide access to the expansion of Sun City Grand west of SR 303. The bridge structures were designed to span over four freeway lanes in each direction. No ramps or other access is planned between SR 303 and these two streets.

MCDOT has also completed construction of a new four-lane divided roadway from the Reems Road section line to the future El Mirage Road (Work Order No. 68840-2A). This roadway and Patriots Bridge were opened to traffic on May 15, 2004, when the new four-lane divided roadway was extended to Happy Valley Parkway (near the 115th Avenue section line) (Work Order 68840-2B). As part of that project, MCDOT, Peoria, and private developers jointly funded and constructed Happy Valley Parkway from Lake Pleasant Parkway westward including a new bridge over the Agua Fria River to the SR 303L alignment and continuing westward to provide access into the new Vestancia planned community. With the opening of SR 303 in May, a surrogate SR 303 functions from I-10 to I-17 via use of the new Happy Valley Parkway, Lake Pleasant Parkway, and SR 74 (Carefree Highway).

1.6 SUMMARY OF PROJECT PUBLIC INVOLVEMENT PROGRAM

This section includes a summary of the public involvement program for the SR 303L DCR and EA starting in 2001 and continuing through the date of this DCR. More detailed documentation is provided in a supplementary report prepared by MCDOT. The primary component of this program has been the public meetings conducted by MCDOT on June 19, 2001; November 6, 2001; May 17, 2004; and May 19, 2004. These meetings were conducted for the following purposes:

- Inform and educate stakeholders about the project
- Obtain input and feedback
- Identify stakeholder issues and concerns
- Identify opportunities for incorporation of ideas/elements important to the public
- Facilitate consensus building

The documentation in the supplementary report includes copies of the public meeting notices, handout materials, meeting surveys and questionnaires, and summary reports of the meetings including a summary of public comments and questions. Copies of exhibits displayed at the public meetings and the PowerPoint presentation at the first public meeting are also included in the supplementary report.

In addition to the public meetings, several meetings have been held with representatives of the Sun City Grand Coalition, and representatives of Sun City Grand attended several of the monthly coordination meetings at MCDOT in 2001 and 2002.

Stakeholder meetings were held with the resumption of the DCR/EA process in March 2003. These meetings were held approximately every three months and included representatives from MCDOT, ADOT, Federal Highway Administration (FHWA), FCDMC, Goodyear, Glendale, and Surprise.

During the identification, development and evaluation of alternative interchange configurations for the I-10 system interchange, meetings were held with property owners and developers in the vicinity of this planned major interchange.

In addition, the MCDOT-sponsored public involvement program included an SR 303L web site, SR 303L hotline, and regular press releases in local newspapers in order to provide the public with ongoing information on the status of the project.

MCDOT also provided information to real estate professionals in the West and Northwest Valley about the SR 303L project in an effort to convey accurate information to individuals and businesses that are buying and selling property in the vicinity of SR 303L.

1.7 PRIOR REPORTS FOR INDIAN SCHOOL TO CLEARVIEW

The preparation of this DCR by MCDOT began in 2001 and the limits of engineering work was Indian School Road on the south and Clearview Road on the north, a distance of approximately 11 miles. This initial effort was concluded in April 2002, and the following documents were produced:

1. Final Study and Report (September 24, 2001)
2. Traffic Report (April 2002)
3. Preliminary Drainage Report (April 2002)
4. Preliminary Geotechnical Report (April 2002)
5. Initial Design Concept Report, Volumes 1 and 2 (April 24, 2002)

Concurrent with this earlier engineering effort, a preliminary draft environmental assessment was prepared for SR 303 from I-10 to US 60. The documents produced as part of the EA process are listed below.

1. Preliminary Draft Environmental Assessment, July 2002
2. Draft Noise Study Technical Report, May 2002
3. Biotic Communities and Species Evaluation, October 2001
4. Class 1 Cultural Inventory, October 2001
5. Farmland Resources Evaluation, October 2001
6. Initial Site Assessment (for Hazardous Materials and Contamination), October 2001

The above listed engineering and environmental documents are available in the project files for reference. All of the above documents have been updated and fully replaced by reports prepared in 2004 and 2005.

In addition to the above reports produced by URS and DMJM Harris/Entranco/EcoPlan as part of this contract, other reports provided starting points and resource information.

1. *Estrella Roadway and Grade Separation, Phase I*, prepared by Cannon & Associates for MCDOT, August 4, 1999
2. *Final Design Concept Report, State Route Loop 303 (SR 303L), MC 85 to Indian School Road* prepared by HDR for MCDOT, December 2002
3. *Loop 303/ White Tanks Area Drainage Master Plan Update* for FCDMC by URS to be available Summer 2004

1.8 SUPPORTING DOCUMENTS

The following documents were prepared as part of the SR 303L I-10 to US 60 project effort and provide supporting information for this DCR and the companion EA:

1. SR 303 Safety Study (March 19, 2004)
2. Final Traffic Report (January 2006)
3. Preliminary Drainage Report (May 2008)
4. Preliminary Geotechnical and Pavement Report (March 2006)
5. Draft Environmental Assessment (TBD 2008)
6. Noise Report (May 2004, updated August 2005)
7. Biological Evaluation (August 2007)
8. Class 1 Cultural Resources Inventory (April 2004)
9. Farmland Resources Evaluation (May 2004) (NRCS Evaluation May 2005)
10. Initial Site Assessment (January 2002)
11. Public Involvement Documentation (June 2004)
12. Drainage System Cost Sharing Analysis Report (May 10, 2005)
13. I-10/SR 303L System TI Change of Access Report (April 9, 2008)